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IN THIS ISSUE

Chronic Disease Incidence

Public Health Service Publications



CONTENTS

	Page
An estimate of the incidence of chronic disease. P. S. Lawrence.....	69
Public Health Service publications. A list of publications issued during the period January-June 1947.....	83
Deaths during week ended December 20, 1947.....	87

INCIDENCE OF DISEASE

United States:	
Reports from States for week ended December 27, 1947, and comparison with former years.....	88
Weekly report from cities:	
City reports for week ended December 20, 1947.....	92
Rates, by geographic divisions, for a group of selected cities.....	94
Foreign reports:	
Canada—Provinces—Communicable diseases—Week ended December 6, 1947.....	95
United States-Mexican border—Cerebrospinal meningitis outbreak.....	95
Reports of cholera, plague, smallpox, typhus fever, and yellow fever received during the current week—	
Cholera.....	96
Smallpox.....	96

Public Health Reports

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AN ESTIMATE OF THE INCIDENCE OF CHRONIC DISEASE

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During the period from 1921 to 1924, the United States Public Health Service conducted a sickness survey among 1,822 white families in Hagerstown, Md. A resurvey of these families was conducted in 1943. The first report (1) of this investigation showed the relation between chronic sickness among individuals in the original survey and their survivorship in 1943. In the resurvey, data were obtained not only on mortality, but also on the record of sicknesses among the survivors. In the present report, data are presented on the mortality and morbidity from chronic diseases among those persons who were subjectively free of chronic illness in 1923.

Several surveys have been made to estimate the prevalence or volume of chronic disease as of a given date. Each of these, chief among which was the National Health Survey, (2) has shown the great magnitude of the chronic disease problem and the increasing need for private and public health planning to cope with these ailments. Because of the long duration of many of the chronic impairments, the prevalence rates which are available are incapable of giving anything but the roughest estimates as to the age specific incidence or rate of appearance of new cases of chronic diseases within a given period of time. Nor could this incidence be calculated if such diseases were officially reportable, for in all probability only a small proportion of them would be recorded. Yet a knowledge of the incidence of chronic diseases by ages would be of value for the following purposes:

1. Estimating the future costs of a medical care program, whether it be indigent medical care, industrial health fund, or hospitalization or medical care insurance.

2. Reaching decisions concerning individual endowment insurance and determining group programs of retirement and retirement funds.

3. Estimating future needs for medical personnel and equipment in private and public chronic disease institutions, which is of particular importance in view of the constantly increasing proportion of people in the older age groups.

The present material is neither extensive enough nor refined enough for detailed application to the above purposes. However, in view of the lack of more specific knowledge, it is believed justifiable to approximate from it a measure of the incidence of chronic illness by age.

MATERIAL

The original family survey was made by trained workers. All classes of the population were covered by the sections selected for the study. At the time of the first visit information as to socioeconomic and sanitary factors in the household was obtained. Thereafter home visits were made at intervals of less than 2 months to obtain information about illnesses which had occurred during that period. The detailed techniques of this survey have been reported by Sydenstricker (3). He states that the records obtained were of attacks, rather than illness in the sense of ill health, and that of the persons affected with some chronic condition only those who suffered ill-effects from this condition during the interval between visits were recorded as having a chronic ailment. The present study includes only those persons who were members of families visited periodically for 12 months or longer and who had no history of an attack of a chronic disease during the entire period of observation. Of the 5,027 individuals thus obtained, who were either dead or of known state of health in 1943, 83 percent had been originally observed for 26 months or longer, 11 percent for 18 to 26 months, and less than 7 percent for 12 to 18 months. Since these persons had given no evidence of subjective symptoms of chronic illness for a period in excess of 12 months, they may be considered, as a group, free of chronic impairment at the end of the original survey.

The method followed in the resurvey conducted in 1943 has been described in the first report. In locating the original families and persons, use was made of family records in the Hagerstown office of the United States Public Health Service, records of the Washington County Health Department, directories, and records of official and quasi-official organizations. When living members of a family were traced, home visits were made to obtain the information desired. The responses concerning chronic ailments of living persons were given, of course, in the language, and according to the knowledge, of the respondent.

Table 1 presents the age distribution among persons who had no complaint in 1921-24 and who were dead, chronically ill, or had no illness in 1943. The cause of death or illness, where known, was classified as a chronic disease on the basis of the nature of the disease in the same manner as in the 1921-24 survey. Among these causes are the following broad groupings by disease or organs involved: Neuritis, sciatica, neuralgia; insanity, mental disorders; paralysis;

cerebral hemorrhage, apoplexy; epilepsy; diseases of eyes and ears; rheumatism, chronic arthritis; upper respiratory (chronic sinusitis, rhinitis, bronchitis); asthma, hay fever; lower respiratory (tuberculosis, chronic pleurisy); stomach and intestines (ulcers, hernia); liver and other digestive; diabetes; kidneys; bladder and other genitourinary; vascular (arteriosclerosis, thrombosis, etc.); heart (myocarditis, endocarditis, valvular diseases, etc.); cancer.

TABLE 1.—*Age distribution of persons who were well in 1923 and who, by 1943 had died, had a chronic illness, or were still well*

Age in 1923	Well in 1923	Dead by 1943				Ill in 1943				Well in 1943
		Acute disease or violence	Unknown cause	Chronic disease	Total dead	Known chronic disease	Chronic illness of ill-defined or unstated cause	Major permanent impairment	Total ill	
Under 5	670	23	0	1	24	30	26	4	60	586
5-9	663	19	3	10	32	32	26	4	62	569
10-14	570	8	3	17	28	31	22	1	54	488
15-19	474	11	5	18	34	35	20	6	61	379
20-24	402	12	2	11	25	37	13	3	53	324
25-29	406	19	5	31	55	29	26	3	58	293
30-34	381	18	2	32	52	38	26	7	71	258
35-39	318	7	13	48	68	33	28	2	63	187
40-44	303	16	4	55	75	49	21	4	74	154
45-49	256	5	5	73	83	40	16	4	60	113
50-54	188	12	9	87	108	22	14	1	37	43
55-59	138	4	7	79	90	14	5	1	20	28
60-64	108	3	4	78	85	3	5	1	9	14
65-69	77	4	2	63	69	1	4	0	5	3
70-74	51	3	2	44	49	0	1	0	1	1
75 over	22	0	1	20	21	0	1	0	1	0
All ages	5,027	164	67	667	898	394	254	41	689	3,440

Included among the major permanent impairments are the following: Spinal injuries; disability from broken knees and hips; lost leg or arm; crippled (specified and unspecified); after effects of poisoning, burns, or acute diseases.

Minor orthopedic impairments and complaints of temporary conditions due to menopause are excluded from the present study.

It is evident that the accuracy of diseases and illnesses reported in table 1 is unsatisfactory from the standpoint of diagnosis of disease by physical examination. But for this study it is desired to know how many persons from the original well population complained of some chronic ailment or gross impairment at the expiration of 20 years. It is assumed that the cases above are a reasonably accurate report of this condition among persons who were still alive in 1943.

For persons who died or were interned in Washington County, information as to the date and cause of death was obtained from death certificates. Data on cause of death were also received from relatives during the canvass of homes, and whenever possible were verified by death certificates.

COMPARISON WITH OTHER MATERIAL

The literature contains no information from which comparisons can be made with the chronic disease incidence rates estimated in this report. Yet it is desirable, for the purpose of judging the general applicability of the findings of this sample, to see how certain observations derived from the present population compare with similar observations that are available from other sources. To this end, chronic disease prevalence rates and mortality rates for the Hagerstown material are presented below in conjunction with the corresponding figures from data of wider scope.

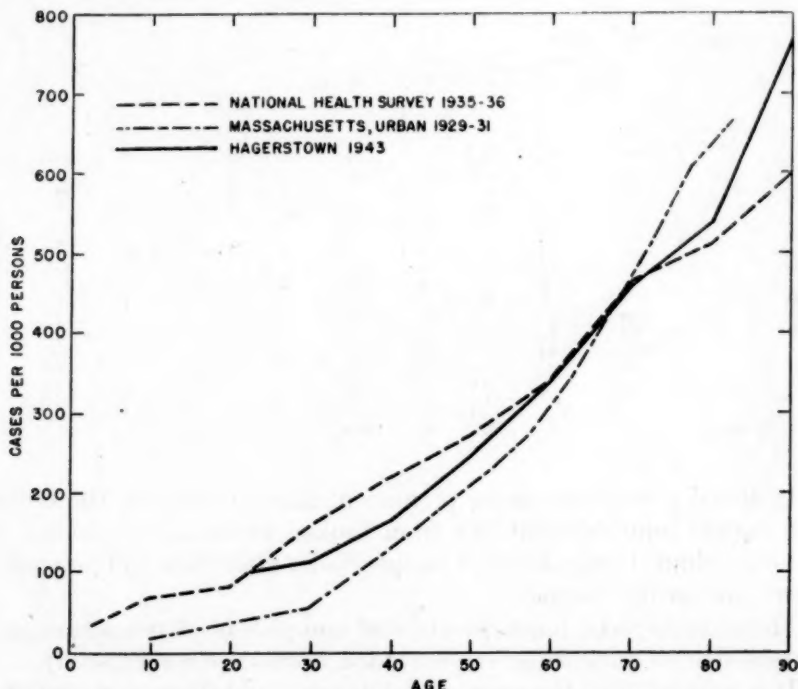


FIGURE 1.—Prevalence of chronic diseases and major physical impairments in three surveys.

Prevalence of chronic disease.—Figure 1 graphically compares the prevalence of chronic disease and major impairments per 1,000 persons in the Hagerstown data of 1943 with the corresponding rates from the National Health Survey of 1935-36 and from the Massachusetts survey of 1929-31 (4). Since none of the persons in the Hagerstown resurvey was less than 20 years of age, the curve for Hagerstown contains no readings below this point. In the computation of the present rates, those individuals who had a chronic complaint in 1923 and who were still alive in 1943 were added to the figures of table 1, resulting in a total living population of 5,073 persons. The prevalence curve for the National Health Survey is based upon approximately 2,500,000 urban residents of 18 States. The curve for Massachusetts is from a

canvass of about 60,000 residents of 8 cities. Persons with minor orthopedic impairments undoubtedly contribute heavily to the prevalence rates among young adults in the National Health Survey. Such persons, unless they also complained of a chronic disease, were not included among the Hagerstown or Massachusetts cases. The differences in material included probably account for a large part of the deviation between the curves presented.

The National Health Survey prevalence rate for all ages is 177 per 1,000. It has been estimated (5) that the rate for chronic disease only

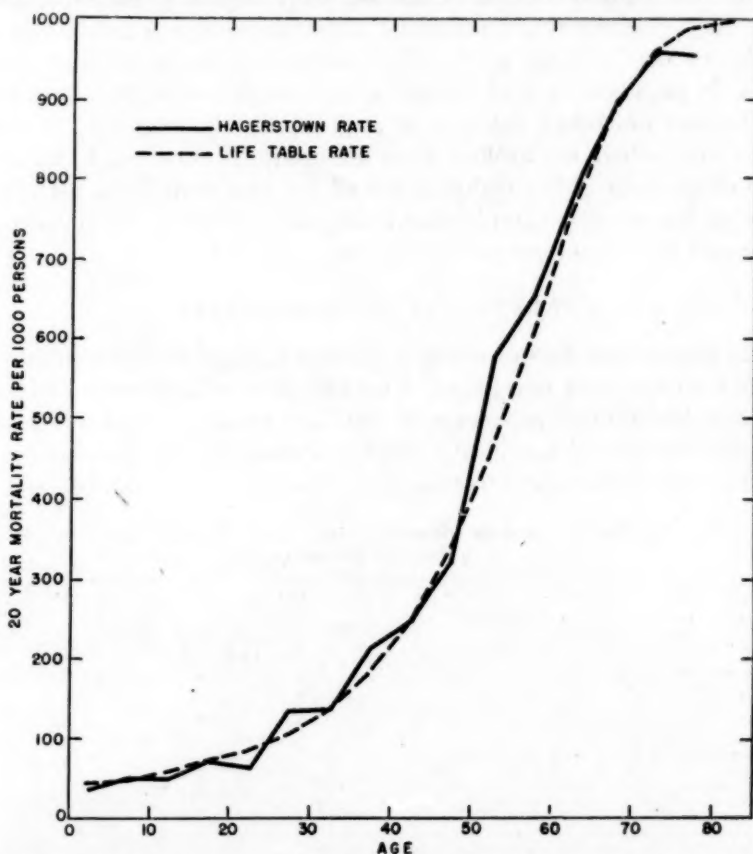


FIGURE 2.—Comparison of 20-year mortality rates for Hagerstown, 1923-43, with the 20-year rates computed from the U. S. life table population based on 1929-31 mortality.

is 156. In the Hagerstown data the prevalence rate for persons 20 years of age and over is 212 per 1,000 for both sexes, 242 for females, and 178 for males. This is consistent with other observations as to the higher reported volume of chronic illness among females than among males.

Mortality.—The 5,027 persons who were well in 1923 had a mortality of 178.6 per 1,000 during the 20-year period. This is a little in excess of the rate presented in the first report which did not include in the

population or deaths persons who died of unknown cause. In the present study the death rate is 196.2 for 2,686 males and 158.5 for 2,341 females. The mortality rate is higher for males than for females at every decennial age period except from 10 to 19.

It is of interest to compare the 20-year rates of mortality from the present sample with the corresponding rates obtained from life table experiences. The Hagerstown rates were computed from the population and total dead at each age in table 1. These are shown connected by solid lines in figure 2. The life tables for whites of each sex in the United States, 1929-31, were selected for comparison since they represent the mortality experience at approximately the middle of the 20-year span. By combining the male and female life table populations and summing the deaths over 20-year periods, the 20-year mortality rates were approximated at ages 2, 5, 7, etc. These are joined by broken lines in figure 2. Although there are some differences in the composition of the two populations, the mortality of the present sample shows no gross deviation from mortality in general during the period of the years covered.

TWENTY-YEAR INCIDENCE RATES

The population free of chronic disease in 1923 and the number of persons within that population who had died of a chronic disease or who still had a chronic disease in 1943 are presented in table 2 along with the computed morbidity incidence rates for the 20-year period. In this and subsequent tables five decimals are retained, but for

TABLE 2.—Population, chronic diseases cases, and 20-year incidence rates by quinquennial age groups

Age in 1923	Population	Ill or dead of chronic disease at $x+20$	Observed 20-year incidence	Smoothed 20-year incidence
x	P	$_{20}C_x$	$_{20}I'_x$	$_{20}I_x$
(1)	(2)	(3)	(4)	(5)
Under 5.....	647	61	0.09428	0.10889
5-9.....	641	72	.11232	.11698
10-14.....	559	71	.12701	.12963
15-19.....	458	79	.17249	.14927
20-24.....	388	64	.16495	.17905
25-29.....	382	89	.23298	.22291
30-34.....	361	103	.28532	.28477
35-39.....	298	111	.37248	.36687
40-44.....	283	129	.45583	.46748
45-49.....	246	133	.54065	.57937
50-54.....	167	124	.74251	.69113
55-59.....	127	99	.77953	.79138
60-64.....	101	87	.86139	.87313
65-69.....	71	68	.95775	.93461
70-74.....	46	45	.97826	.97815
75+.....	21	21	1.00000	1.00760

¹ Rejected.

arithmetic accuracy all computations were carried to eight decimal places. Column 1, shows ages grouped by 5-year intervals accord-

ing to age in 1923. Hence the rates in this table apply to the experience expected at the approximate central ages of the intervals. The population entered in column 2 is composed of those persons who were well in 1923 and known to be dead or of a known condition of health in 1943, as heretofore described, but excludes those individuals who died of acute disease, violence, or unknown cause. Column 3 enumerates all cases of chronic illness and major physical impairment that existed at the end of the 20-year period, and deaths from chronic disease that occurred during the 20-year span. The observed 20-year incidence rates derived from these figures and designated as ${}_{20}r'_x$ are presented in column 4. It should be noted that of the persons still alive in 1943 only those who complained of a chronic disease or major impairment at the end of the 20-year period are included among the cases. The calculation of incidence rates from such figures assumes that none of the persons who claimed to be in good health in 1943 had developed a chronic illness between 1923 and 1943.

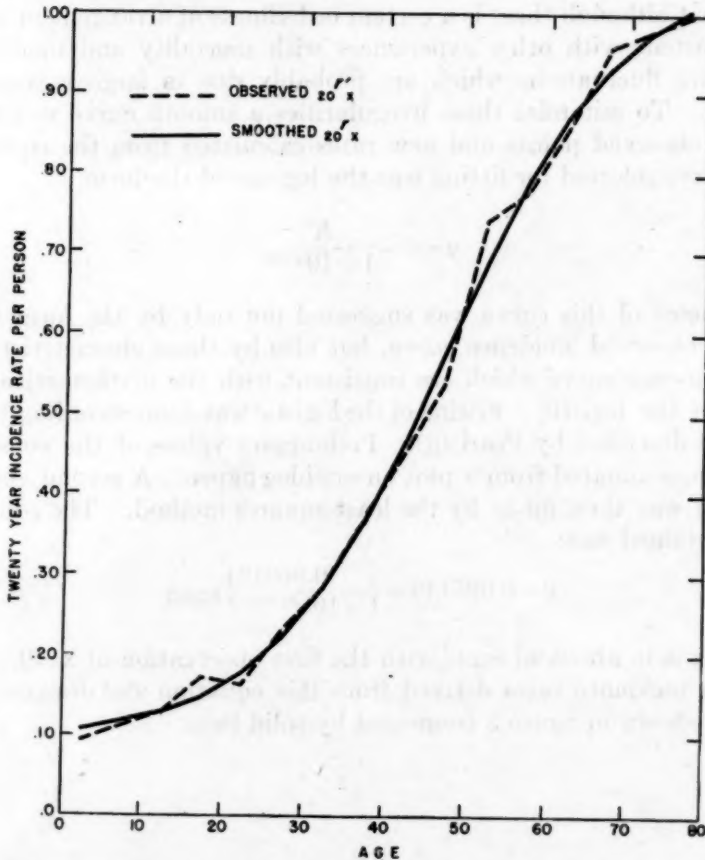


FIGURE 3.—Observed and smoothed 20-year rates of incidence of chronic diseases and major physical impairments.

Information in most cases is not available as to whether individuals who died of acute, violent, or unknown causes had developed a chronic disease prior to death. For this reason these persons do not contribute to the chronic illness column. The exclusion of such persons from the population assumes that if they had survived they would have developed chronic sicknesses during the 20-year period at the same rate as the remainder of the group with which they started. According to the experience of this sample, the ${}_{20}r'_x$ values closely approximate the probability that an individual of age x will develop a chronic disease or major disability before he reaches age $x+20$. Actually the true rates from the present data would be obtained by including in the population those persons who died of acute, violent, and unknown causes, and including among the ill the cases of chronic illness that occurred in that group prior to death. The ${}_{20}r'_x$ values presented are probably slightly in excess of the rates that would be obtained if it were possible to follow this procedure.

The broken lines of figure 3 connect the observed rates. It will be seen that although there is a certain orderliness of arrangement which is consistent with other experiences with mortality and morbidity, there are fluctuations which are probably due in large measure to chance. To minimize these irregularities a smooth curve was fitted to the observed points and new rates calculated from the equation. The curve selected for fitting was the logistic of the form:

$$y-d = \frac{K}{1+10^{\alpha+\beta x}}$$

The choice of this curve was suggested not only by the form taken by the observed incidence curve, but also by those characteristics of the incidence curve which are consistent with the mathematical features of the logistic. Fitting of the logistic was done according to the method described by Pearl (6). Preliminary values of the constants were approximated from a plot on arithlog paper. A second approximation was then made by the least squares method. The equation thus obtained was:

$$y-0.095149 = \frac{0.966191}{1+10^{1.840943-0.204773x}}$$

where x is in abscissal units with the first observation at $x=0$. The 20-year incidence rates derived from this equation and designated as ${}_{20}r'_x$ are shown in figure 3 connected by solid lines.

TABLE 3.—Approximation of 5-year rates of incidence of chronic disease and major physical impairments

Age	Probability of remaining free of chronic disease from x to $x+20$	Number free of chronic disease out of 100,000 at age 2.5		Probability of remaining free of chronic disease from x to $x+5$	Probability of developing a chronic disease from x to $x+5$
		At 20-year intervals	Computed from interpolation		
x	${}_{20}S_x$	W_x	W_x	${}_5S_x$	${}_5I_x$
(1)	(2)	(3)	(4)	(5)	(6)
2.5	0.89111	100,000	100,000	0.97519	0.02481
7.5	.88303	-----	97,519	.97305	.02695
12.5	.87037	-----	94,891	.97044	.02956
17.5	.85073	-----	92,086	.96769	.03231
22.5	.82095	89,111	89,111	.96635	.03365
27.5	.77709	-----	86,112	.95910	.04090
32.5	.71523	-----	82,590	.94854	.05146
37.5	.63313	-----	78,340	.93383	.06617
42.5	.53252	73,156	73,156	.91472	.08528
47.5	.42063	-----	66,917	.88275	.11725
52.5	.30887	-----	59,071	.83965	.16035
57.5	.20862	-----	49,599	.78544	.21456
62.5	.12687	38,957	38,957	.72254	.27746
67.5	.06539	-----	28,148	.64818	.35182
72.5	.02185	-----	18,245	.56711	.43289
77.5	.00000	-----	10,347	.47763	.52237
82.5	-----	4,942	4,942	.37252	.62748
87.5	-----	-----	1,841	.21673	.78367
92.5	-----	-----	399	.00000	1.00000

APPROXIMATION OF 5-YEAR INCIDENCE RATES

As the incidence of chronic diseases over a 20-year interval is too coarse a measure to be particularly meaningful, it was thought advisable to approximate, from the observed figures, the incidence rates over a shorter period of time. Because of the small size of the sample, the material will be treated by 5-year age groups and 5-year incidence rates. It is apparent that if ${}_{20}r_x$ is the probability that an individual who is well at a given age will develop a chronic disease or a major impairment within 20 years, then the probability that such an individual will remain free of chronic disease or impairment for 20 years is $1 - {}_{20}r_x$. This probability is designated as ${}_{20}S_x$ in column 2 of table 3.

If one establishes a theoretical population of 100,000 individuals all of whom are free of chronic disease or major impairment at $2\frac{1}{2}$ years of age, at the end of 20 years 89,111 of them would still be free of chronic illness. This is obtained from the relationship:

$${}_{20}S_x \cdot W_x = W_{x+20} \quad (1)$$

where W_x is the theoretical population free of disease at age x and W_{x+20} is the population free of disease at age $x+20$. As shown in column 3 of the table, a continuation of this procedure yields the

number of persons out of the original group of 100,000 who would still be well at 20-year intervals, based upon the smoothed experience of the sample. If the well population were known for four successive 5-year intervals of age, it would be possible, by further applications of equation (1) to obtain the well population at 5-year intervals over the entire age range. The desired 5-year incidence rates could then be obtained from the following equations:

$${}_5s_x = \frac{w_{x+5}}{w_x} \quad (2)$$

$$1 - {}_5s_x = {}_5r_x \quad (3)$$

Following this plan, the task becomes one of approximating four successive w_x values at 5-year intervals, using some method which is logical in the light of our present knowledge of the occurrence of diseases and population changes, and based upon the observed ${}_{20}s_x$ figures. By this it is meant that the w_x figures obtained should, upon the application of equations (2) and (3), yield an ${}_5s_x$ or ${}_5r_x$ curve which has a smooth continuity over the entire age range and which is consistent with the original observations. The values of w_x at 20-year intervals were plotted and a third order parabola was forced to pass through the first four observations. The curve obtained was

$$y = 100,000 - 3187.1667X + 253.5000X^2 - 34.3177X^3$$

where x is in units corresponding to 5-year age intervals with the first observation at $x=0$. Values of w_x were then interpolated at 5-year intervals between the second and third points to which the curve was fitted. The resulting series of numbers is given below.

Age:	Well population
22.5.....	89, 111
27.5.....	86, 112
32.5.....	82, 590
37.5.....	78, 340
42.5.....	73, 156

Having obtained approximated values of w_x at 5-year intervals over a 20-year span, it is possible to compute these figures forward to the oldest age and backward to the youngest age by applying equation (1). The completed w_x series is shown in the fourth column of the table. Column 5 gives the 5-year rates of survival free from chronic disease, obtained by the successive divisions indicated in equation (2). The relationship given in equation (3) furnishes the last column of this table. These ${}_5r_x$ rates are the approximate probabilities that an individual, free of chronic disease or major impairment at age x will develop (and may die of), such a disease or impairment during the ensuing 5 years.

The estimation of incidence rates from data on a resurveyed population is new to the study of chronic illness. In view of the experimental nature of the method employed, a consideration of certain features of this method is presented in the appendix.

DISCUSSION

The 5-year incidence rates derived in the preceding section and presented in figure 4 indicate that the rate of occurrence of new cases of chronic diseases and major impairments increases relatively slowly to 35 persons per 1,000 at 25 years of age. At such young ages these rates may be considered as roughly the equivalent of 5 to 7 persons per 1,000 annually. As seen from the graph, the curve increases during the next 20 years to about 100 persons per 1,000 at age 45. From this point on the rate is accelerated. A person fortunate enough to have escaped chronic illness until he is 75 stands about a 50-50 chance of being free of disease or major impairment if he lives to be 80. To view these figures from a different standpoint, out of every 1,000 persons who are well at age 45, approximately 100 of them will require, during the next 5 years, medical attention

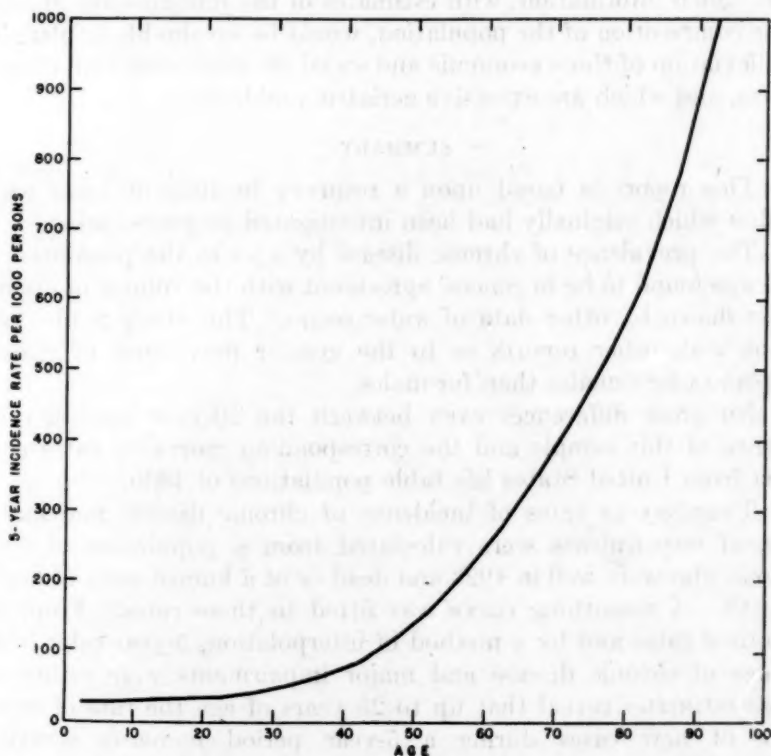


FIGURE 4.—Quinquennial rates of incidence of chronic diseases and major impairments.

for the onset of a chronic disease or a major impairment. Some of these 100 will then require periodic medical treatment, and a few of them almost constant medical care of some nature until they die. Nearly 25 percent of the persons well at 60 will develop within the ensuing 5 years a chronic ailment for which they probably will seek or require medical treatment, and, in many cases, will continue to require care. These increase to about 40 percent at 70, 57 percent at 80, and 90 percent at 90, although with advancing age the absolute number of persons subject to the risk of developing a chronic disease decreases in accordance with the age composition of the population.

The foregoing figures indicate that if the proportion of old people becomes greater without a decrease in the total population, it is highly probable that there will be an increased need for medical services for the care of the chronically ill. This is especially true since the average duration of illness increases progressively with age, as has been pointed out in a comprehensive discussion of population trends (7). It would be of great value to have information on the age incidence of specific chronic diseases, together with the amount and cost of care required for these diseases over a given period of time. Such information, with estimates of the probable age changes in the composition of the population, would be invaluable in planning for alleviation of those economic and social ills associated with chronic disease, and which are extensive geriatric problems.

SUMMARY

1. This report is based upon a resurvey in 1943 of 1,822 white families which originally had been investigated 20 years earlier.

2. The prevalence of chronic disease by ages in the population of 1943 was found to be in general agreement with the volume of chronic illness shown by other data of wider scope. This study is also consistent with other reports as to the greater prevalence of chronic complaints for females than for males.

3. No gross differences exist between the 20-year mortality experience of this sample and the corresponding mortality rates computed from United States life table populations of 1930.

4. Twenty-year rates of incidence of chronic disease and major physical impairments were calculated from a population of 5,027 persons who were well in 1923 and dead or of a known state of health in 1943. A smoothing curve was fitted to these rates. From the smoothed rates and by a method of interpolation, 5-year rates of incidence of chronic disease and major impairments were estimated. These estimates reveal that up to 25 years of age the rate of occurrence of new cases during a 5-year period increases slowly to 35 persons per 1,000. A gradual increase then takes place to about 100 cases per 1,000 at age 45. From this age on the 5-year incidence

increases rapidly to nearly 250 per 1,000 at age 60, 400 at 70 years, 575 at 80 years, and 900 at 90 years.

5. It is suggested that further and more detailed studies on the age incidence of specific chronic diseases would prove valuable for purposes of private and public health planning in geriatrics.

APPENDIX

The principal difficulty in approximating the quinquennial incidence rates was due to a deficiency inherent in the original data. A 20-year period is too long a span for accurate interpolation of intermediate values. On the other hand the data are of such a nature that the 5-year rates may be approximated so as to retain fidelity to the 20-year incidence curve. In other words, the ${}_5s_x$ rates are forced to yield ${}_{20}r_x$ rates which are identical with the observations in the last column of table 2, but due to inaccuracies of interpolation, there may be irregularities within each 20-year span which result in undulations over 20-years periods. In an effort to minimize such irregularities and yet retain a relatively simple technique, several methods and types of curves for interpolation were tried on these and similar data. Most methods were rejected because they led to illogical results in that they failed to yield smooth junctions in the ${}_5s_x$ (or ${}_5r_x$) values at adjacent 20-year periods. The third order parabola proved to be the simplest and the most generally satisfactory over the variety of material upon which the several methods were tried. This equation led to fairly smooth results on the present data, but some other equation, or interpolation over a different age range, might prove more satisfactory for other observations.

TABLE 4.—Life table quinquennial mortality rates and quinquennial mortality rates approximated from 20-year survivorship

Age interval	Number dying in interval out of 1,000 alive at beginning of interval		Age interval	Number dying in interval out of 1,000 alive at beginning of interval	
	Life table	Approximated		Life table	Approximated
Under 5.....	78.47	77.33	55-59.....	112.47	114.22
5-9.....	8.81	7.48	60-64.....	146.70	145.52
10-14.....	6.73	7.35	65-69.....	218.09	217.16
15-19.....	10.94	12.88	70-74.....	301.85	302.29
20-24.....	15.04	13.29	75-79.....	407.57	408.74
25-29.....	15.93	14.60	80-84.....	532.64	552.01
30-34.....	18.10	18.70	85-89.....	669.18	698.82
35-39.....	24.52	26.44	90-94.....	804.24	804.24
40-44.....	36.18	34.99	95-99.....	898.28	898.46
45-49.....	52.06	50.78	100-104.....	977.13	978.26
50-54.....	79.99	80.55			

To give an example of the results obtained when this method is employed on other material, the identical procedure was applied to a 5-year abridged life table for white males in Connecticut, 1929-31(8). From the life table population (number of survivors), the 20-year survivorship rates were computed at 5-year intervals of age. The 5-year mortality rates were then approximated as previously described for the estimation of chronic disease incidence rates.

The original quinquennial mortality rates upon which the life table population was based are compared in table 4 with the corresponding rates approximated by the method employed in this paper. It will be seen that the approximated 5-year rates deviate from the original figures in a regular and undulating manner, although the basic pattern of mortality throughout the entire range of ages is preserved. The maximum deviation in any age group is about 2 persons per 1,000. In this example the third order parabola was used for interpolation solely to reproduce identically the method used earlier for chronic diseases. It was apparent, even without comparison with the original mortality rates, that the use of a third order parabola was not the best suited method of interpolation from the life table figures and that the smoothness of the approximated rates could undoubtedly have been improved by the employment of some other equation. From the standpoint of smoothness, better results were obtained in the approximation of the chronic disease incidence rates than in the approximation of 5-year mortality rates from the life table population.

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- (4) Bigelow, G. H., and Lombard, H. F.: Cancer and other chronic diseases in Massachusetts. Boston, Houghton-Mifflin Co. 1933.
- (5) Britten, R. H., Collins, S. D., and Fitzgerald, J. S.: The national health survey. Some general findings as to disease, accidents, and impairments in urban areas. *Pub. Health Rep.* 55: 444-470 (1940).
- (6) Pearl, R.: Introduction to medical biometry and statistics. Philadelphia, W. B. Saunders Co., 1941.
- (7) Perrott, G. St. J., and Holland, D. F.: Population trends and problems of public health. *Milbank Mem. Fund Quart.*, vol. XVIII, no. 4 (October) 1940.
- (8) Reed, L. J., and Merrell, M.: A short method for constructing an abridged life table. *Am. J. Hyg.*, 30: 33-62 (1939).

PUBLIC HEALTH SERVICE PUBLICATIONS

A List of Publications Issued During the Period January-June 1947

There is given herewith a list of publications of the United States Public Health Service issued during the period January-June 1947.

The purpose of this list is to provide a complete and continuing record of Public Health Service publications, for reference use by librarians, scientific workers, and others interested in particular fields of public health work, and not to offer the publications for indiscriminate free distribution.

Single sample copies are available from the Public Inquiries Section, Office of Health Information, United States Public Health Service, Washington 25, D. C.

Quantities may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at prices shown, with a reduction of 25 percent on lots of 100 copies or more of a single publication.

Those publications marked with an asterisk (*) can be obtained only by purchase.

Periodicals

*Public Health Reports (weekly), January-June, vol. 62, Nos. 1 to 26, pages 1 to 968. 10 cents a number. Subscription price \$4 a year.

Extracts from Public Health Reports (monthly), January-June, Tuberculosis Control Issues Nos. 11 to 16, 30 pages each. 10 cents a number. Subscription price \$1 a year.

*The Journal of Venereal Disease Information (monthly), January-June, vol. 28, Nos. 1 to 6, pages 1 to 128. 10 cents a number. Subscription price 75 cents a year.

*Journal of the National Cancer Institute (bimonthly), February-June, vol. 7, Nos. 4 to 6, pages 183 to 465. 40 cents a number. Subscription price \$2 a year.

Public Health Engineering Abstracts (monthly), January-June, vol. XXVII, Nos. 1 to 6, 32 pages each. No sales stock.

Industrial Hygiene Newsletter (monthly), January-June, vol. 7, Nos. 1 to 6, 16 pages each. 10 cents a number. Subscription price \$1 a year.

National Negro Health News (quarterly), January-June, vol. 15, Nos. 1 and 2, 24 pages each. No sales stock.

Reprints From the Public Health Reports

2765. The relation of the National Mental Health Act to State health authorities
By Robert H. Felix. January 10, 1947. 9 pages. 5 cents.

2766. The Hospital Survey and Construction Act. Legislation on hospital surveys, construction, and licensing enacted by State legislatures in 1945 and 1946 (as of November 15, 1946). By Vane M. Hoge. January 10, 1947. 18 pages. 10 cents.

2767. The control of rat ectoparasites with DDT. By Russell G. Ludwig and H. Page Nicholson. January 17, 1947. 8 pages; 3 plates. 5 cents.

2768. Observations on the nighttime resting and biting habits of anopheline mosquitoes in DDT-treated and untreated buildings. By Clarence M. Tarzwell and Frank W. Fisk. January 17, 1947. 12 pages. 5 cents.

2769. Comparative studies of DDT dusts, DDT-oil sprays, and paris-green dusts used routinely in anopheline larvae control. By Willis V. Mathis, Frederick F. Ferguson and S. W. Simmons. January 17, 1947. 8 pages. 5 cents.
2770. Services and visits in a children's dental clinic. By Isidore Altman. January 24, 1947. 18 pages. 10 cents.
2771. Public Health Service publications. A list of publications issued during the period January-June 1946. January 24, 1947. 6 pages. 5 cents.
2772. Extended laboratory investigations on the toxicity of DDT residues to adults of *Anopheles quadrimaculatus*. By R. W. Fay, S. W. Simmons and J. M. Clapp. January 31, 1947. 10 pages. 5 cents.
2773. The comparative residual toxicity of DDT to *Anopheles quadrimaculatus* when applied on different surfaces. By J. M. Clapp, R. W. Fay and S. W. Simmons. January 31, 1947. 14 pages. 5 cents.
2774. A comparative study of live and killed vaccines in experimental tuberculosis. By B. J. Olson, Karl Habel and Willard R. Piggott. February 28, 1947. 4 pages. 5 cents.
2775. Control of anopheline mosquito larvae by use of DDT-oil mists. By Frederick F. Ferguson, Earl H. Arnold and William M. Upholt. February 28, 1947. 6 pages. 5 cents.
2776. The inactivation of DDT used in anopheline mosquito larvicides. By William M. Upholt. February 28, 1947. 8 pages. 5 cents.
2777. Isolation of an unidentified spirochete from hen's eggs after inoculation with liver tissue from hens. By Edward A. Steinhaus and Lyndahl E. Hughes. February 28, 1947. 4 pages. 5 cents.
2778. Simplified appraisal of dental-health programs. By John W. Knutson, Cecelia Maday and William A. Jordan. March 21, 1947. 10 pages. 5 cents.
2779. Shadowed replicas of ground sections through teeth. By David B. Scott and Ralph W. G. Wyckoff. March 21, 1947. 12 pages; 8 plates. 10 cents.
2780. The effect of topically applied sodium fluoride on dental caries experience. IV. Report of findings with two, four and six applications. By John W. Knutson, Wallace D. Armstrong and Floyd M. Feldman. March 21, 1947. 6 pages. 5 cents.
2781. Effects of DDT mosquito larviciding on wildlife. Part I. The effects on surface organisms of the routine hand application of DDT larvicides for mosquito control. By Clarence M. Tarzwell. April 11, 1947. 30 pages; 2 plates. 10 cents.
2782. An improved method of producing smallpox vaccine of low bacterial content. By D. H. Ducor. April 18, 1947. 20 pages; 3 plates. 10 cents.
2783. The control of houseflies by DDT sprays. By W. C. Baker, H. I. Scudder and E. L. Guy. April 25, 1947. 18 pages; 2 plates. 10 cents.
2784. The techniques of application and the control of roaches and bedbugs with DDT. By Robert L. Stenborg. May 9, 1947. 13 pages. 5 cents.
2785. A new technique for sampling the density of housefly populations. By H. I. Scudder. May 9, 1947. 7 pages; 1 plate. 10 cents.
2786. Studies of sewage purification. XVII. The utilization of organic substrates by activated sludge. By O. R. Placak and C. C. Ruchhoft. May 16, 1947. 20 pages. 10 cents.
2787. Rickettsialpox—A newly recognized rickettsial disease. V. Recovery of *Rickettsia akari* from a house mouse (*Mus musculus*). By Robert J. Huebner, William L. Jellison and Charles Armstrong. May 30, 1947. 4 pages. 5 cents.

2788. Preliminary studies on the control of blowflies with DDT. By W. C. Baker and L. G. Schwartz. May 30, 1947. 9 pages; 1 plate. 5 cents.
2789. A new *Salmonella* type isolated from man: *Salmonella texas*. By James Watt, Thelma M. DeCapito and Alice B. Moran. May 30, 1947. 3 pages. 5 cents.
2790. A study of murine typhus fever in Coffee County, Alabama. By Elmer L. Hill and Samuel C. Ingraham II. June 13, 1947. 8 pages. 5 cents.
2791. Incidence of poliomyelitis in 1946. By C. C. Dauer. June 20, 1947. 9 pages. 5 cents.
2792. Fly-abatement studies in urban poliomyelitis epidemics during 1945. By Joseph L. Melnick, Robert Ward, Dale R. Lindsay and F. Earle Lyman. June 20, 1947. 14 pages. 5 cents.
2793. Studies in deratization of surface vessels by means of 1080 (sodium fluoroacetate). By John H. Hughes. June 27, 1947. 8 pages. 5 cents.
2794. Yellow fever vaccine inactivation studies. By H. W. Burruss and M. V. Hargett. June 27, 1947. 17 pages. 10 cents.
2461. Individual sewage disposal systems. Recommendations of Joint Committee on Rural Sanitation. Revised 1947. 33 pages. 10 cents.

Supplements to Public Health Reports

194. Directory of full-time local health officers. (Revised to June 30, 1946). 1947. 44 pages. 15 cents.
195. The toxicology of antimony. By Lawrence T. Fairhall and Frances Hyslop. 1947. 41 pages. 15 cents.

National Institute of Health Bulletin

188. Xylidine (c,c-dimethylaniline): Its toxicity and potential dangers as compared with those of aniline and an appraisal of the potential hazards from its use in blending gasoline. By W. F. von Oettingen, P. A. Neal, R. F. Sievers, J. L. Svrbely, A. R. Monaco, B. L. Horecker, H. Yagoda, T. R. Sweeney, D. C. Peterson, W. C. Alford, V. B. Hauff and H. Gay. 1947. 124 pages. 30 cents.

Miscellaneous Publications

10. Regulations for the sale, barter, or exchange of any virus, therapeutic serum, toxin, antitoxin or analogous product or arsphenamine or its derivatives (or any other trivalent organic arsenic compound) in the District of Columbia or in interstate traffic or in export or import traffic. Approved: January 16, 1947 to supersede regulations issued October 12, 1940 and amendments thereto. 1947. 19 pages. 10 cents.
38. Dating decision number 10. The dating periods recommended for those biologic products specified in the biologics section of the Public Health Service Act of July 1, 1944. Issued May 15, 1947 to supersede dating decision number 9 issued January 25, 1943. 1947. 7 pages. 5 cents.

Annual Report

- Annual Report of the United States Public Health Service for the fiscal year 1946. 1947. 165 pages. 35 cents.

Unnumbered Publications

- Index to Public Health Reports, vol. 61, part 2, July-December 1946. 1947. 18 pages. 10 cents.
- Contents and indexes to Journal of the National Cancer Institute, volume 7, August 1946-June 1947. 1947. 6 pages. 5 cents.

- DDT for control of household pests. Prepared by the Bureau of Entomology and Plant Quarantine, Agricultural Research Administration, United States Department of Agriculture and the United States Public Health Service, Federal Security Agency. March 1947. 15 pages. 5 cents.
- Guide to safe food service. A manual for use in organizing and conducting classes for food establishments employees. By John Andrews and Frances T. Champion. February 1946. 65 pages. 15 cents.
- National Negro Health Week program. This pamphlet is published annually, usually during March, for community leaders in an effort to suggest ways and means by which interested individuals and organizations may be organized for a concerted and effective attack upon the community's disease problems. Thirty-third observance, March 30-April 6, 1947. 4 pages. Out of print.
- National Negro Health Week leaflet. Thirty-third observance. 1947. 2 pages. Out of print.
- National Negro Health Week poster. Thirty-third observance. 1947. Out of print.

Workers Health Series

2. Climate and Tuberculosis. June 1947. 5 cents; \$1 per 100 copies.
9. Chronic Arthritis. May 1947. 5 cents; \$1 per 100 copies.
12. Hemorrhoids (Piles). May 1947. 5 cents; \$1 per 100 copies.
21. Home Care of the Sick. April 1947. 5 cents; \$1 per 100 copies.

Reprints From The Journal of Venereal Disease Information

276. Streptomycin therapy of penicillin-resistant and sulfonamide-resistant specific and nonspecific urethritis. By Edwin J. Pulaski. January 1947. 6 pages. 5 cents.
277. Rapid treatment of early syphilis with penicillin in beeswax and oil. By Evan W. Thomas, Simeon Landy and Corrine Cooper. February 1947. 5 pages. 5 cents.
278. Syphilis mortality. January 1947. 2 pages. 5 cents.
279. Venereal disease interviewing. By Howard P. Steiger and Jane Barbara Taylor. April 1947. 6 pages. 5 cents.
280. The rural public health nurse in venereal disease control. By Frances S. Buck. April 1947. 4 pages. 5 cents.
281. Significance and interpretation of quantitative blood tests for syphilis. By Maurice C. Shepard. May 1947. 4 pages. 5 cents.
282. Penicillin therapy for syphilis in pregnancy. By Mortimer Speiser, Gerald Flaum, Dabney Moon-Adams and Evan W. Thomas. June 1947. 12 pages. 5 cents.
283. Considerations with respect to the application in private practice of penicillin therapy for early syphilis. By Onis G. Hazel. June 1947. 5 pages. 5 cents.

National Office of Vital Statistics Publications

Current Mortality Analysis (monthly), vol. 4, Nos. 10-13, 1946; vol. 5, Nos. 1-4, 1947.

A List of Current Publications of the National Office of Vital Statistics, January 1947. 6 pages.

Explanation of Items on Live Birth, Death, and Stillbirth Certificates, May 1947. 14 pages.

Monthly Marriage Report (marriage licenses issued in major cities), Series PM-4, Nos. 12, 13, 1946; New Series: vol. 1, Nos. 1-5, 1947.

Monthly Vital Statistics Bulletin, vol. 9, Nos. 11-13, 1946; vol. 10, Nos. 1-4, 1947.

Quarterly Marriage Report (marriage licenses issued in the United States by State, 1946), vol. 1, Nos. 3, 4, 5.

The Registrar (monthly), vol. 12, Nos. 1-6.

Vital Statistics—Special Reports, vol. 27, National Summaries:

No. 1. Natality and mortality statistics: United States, 1945. 1 to 8 pages.

No. 2. Deaths and death rates for each cause: United States, 1943-45. 9 to 25 pages.

Vital Statistics—Special Reports, vol. 26, State Summaries:

No. 1. United States summary of vital statistics, 1945. 1 to 32 pages.

Nos. 2-15. Summary of vital statistics, 1945, for each State, Alabama through Iowa (issued in alphabetic order). 33 to 200 pages.

Weekly Mortality Index, vol. 17, Nos. 52, 53, 1946; vol. 18, Nos. 1-25, 1947.

Where to Get a Birth or Death Certificate, May 1947. 4 pages.

DEATHS DURING WEEK ENDED DECEMBER 20, 1947

[From the Weekly Mortality Index, issued by the National Office of Vital Statistics]

	Week ended Dec. 20, 1947	Correspond- ing week, 1946
Data for 93 large cities of the United States:		
Total deaths.....	9,648	9,378
Median for 3 prior years.....	9,163	
Total deaths, first 51 weeks of year.....	469,177	460,804
Deaths under 1 year of age.....	654	790
Median for 3 prior years.....	600	
Deaths under 1 year of age, first 51 weeks of year.....	37,246	34,215
Data from industrial insurance companies:		
Policies in force.....	66,963,740	67,304,021
Number of death claims.....	12,712	11,637
Death claims per 1,000 policies in force, annual rate.....	9.9	9.0
Death claims per 1,000 policies, first 51 weeks of year, annual rate.....	9.2	9.4

INCIDENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED DECEMBER 27, 1947

Summary

The total of influenza cases reported for the current week, 3,835, is only slightly above last week's figure, 3,684, notwithstanding increases in Texas (from 1,498 to 2,015), Arizona (101 to 197), and California (55 to 131). Throughout the Northeastern and North Central States, only 40 cases were reported. For the 32 weeks, since July 27, average seasonal low date, 36,696 cases have been reported, as compared with 32,975 (which is also the 5-year median) for the corresponding period last year.

A total of 61 cases of poliomyelitis was reported, as compared with 54 last week, a 5-year median of 76, and 108 for the corresponding week last year. No State reported more than 10 cases. For the 41-week period, since March 15 (approximate average date of seasonal low incidence), 10,196 cases have been reported, as compared with 24,797 for the corresponding period last year and a 5-year median of 13,337. States reporting the largest numbers during this 41-week period (corresponding figures last year in parentheses) are as follows: Ohio 1,454 (702), New York 1,206 (1,429), Illinois 835 (2,542), California 702 (2,045), Michigan 633 (1,072), Pennsylvania 463 (275), Massachusetts 349 (381), Idaho 342 (52), New Jersey 292 (254), North Carolina 282 (146), Indiana 242 (432), Minnesota 230 (2,831).

During the current week, 1 case of smallpox was reported (in Indiana), 1 case of anthrax (in Pennsylvania), and 1 case of leprosy (in New York). Since the respective average seasonal low incidence dates, figures above the corresponding 5-year medians have been reported for measles and whooping cough; since the beginning of the year, for the dysenteries (combined), infectious encephalitis, Rocky Mountain spotted fever, and tularemia; and above the average of the past 2 years for undulant fever.

Deaths recorded during the current week in 93 large cities of the United States totaled 8,891, as compared with 9,643 last week, 9,380 and 11,399, respectively, for the corresponding weeks of 1946 and 1945, and a 3-year (1944-46) median of 9,934. The cumulative figure is 478,068, as compared with 470,184 for the same period last year. Infant deaths totaled 649, as compared with 654 last week and a 3-year median of 608, and for the year to date, 37,895, as compared with 34,936 for the period last year.

Telegraphic morbidity reports from State health officers for the week ended December 27, 1947, and comparison with corresponding week of 1946 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none was reported, cases may have occurred.

Cases may have occurred.												
Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46
	Dec. 27, 1947	Dec. 28, 1946		Dec. 27, 1947	Dec. 28, 1946		Dec. 27, 1947	Dec. 28, 1946		Dec. 27, 1947	Dec. 28, 1946	
NEW ENGLAND												
Maine.....	1	1	0	-----	2	2	3	123	23	0	0	0
New Hampshire.....	0	0	0	-----	1	-----	1	5	1	0	0	0
Vermont.....	0	1	0	-----	-----	7	1	168	13	0	0	0
Massachusetts.....	10	20	8	-----	-----	-----	60	197	197	0	1	6
Rhode Island.....	0	0	0	-----	-----	8	1	43	3	0	0	0
Connecticut.....	0	1	1	-----	3	11	5	88	20	1	0	2
MIDDLE ATLANTIC												
New York.....	16	19	14	13	15	115	185	211	499	0	6	19
New Jersey.....	2	5	3	4	3	21	354	55	55	2	2	10
Pennsylvania.....	8	15	14	(9)	16	16	161	513	516	8	6	10
EAST NORTH CENTRAL												
Ohio.....	11	10	10	3	8	9	117	167	42	1	4	7
Indiana.....	14	16	9	1	3	17	93	15	15	0	1	4
Illinois.....	1	10	8	2	3	24	709	9	84	2	2	14
Michigan ¹	2	7	11	2	1	5	698	30	99	0	1	5
Wisconsin.....	0	1	3	13	15	45	87	57	57	1	1	1
WEST NORTH CENTRAL												
Minnesota.....	2	4	4	-----	-----	1	139	6	6	2	0	1
Iowa.....	2	6	3	-----	-----	-----	123	4	11	0	0	2
Missouri.....	4	6	5	5	1	7	12	4	7	0	1	6
North Dakota.....	1	2	2	-----	16	16	43	1	1	1	0	0
South Dakota.....	0	0	1	-----	-----	1	8	2	3	0	0	0
Nebraska.....	2	1	1	5	28	28	17	3	5	2	1	1
Kansas.....	0	3	5	2	17	17	4	6	23	0	1	1
SOUTH ATLANTIC												
Delaware.....	0	0	0	-----	-----	-----	3	1	4	1	0	0
Maryland ¹	11	7	7	1	2	4	3	10	10	0	1	2
District of Columbia.....	1	1	1	1	1	4	12	29	4	1	0	1
Virginia.....	7	6	7	419	487	487	215	41	41	2	0	6
West Virginia.....	9	3	2	76	45	45	119	63	6	1	1	1
North Carolina.....	6	4	14	-----	-----	-----	-----	48	17	0	1	4
South Carolina.....	2	1	7	357	271	674	14	24	24	0	1	1
Georgia.....	5	4	4	19	15	65	1	83	14	1	1	2
Florida.....	8	15	5	18	14	11	5	11	4	0	2	2
EAST SOUTH CENTRAL												
Kentucky.....	19	2	6	1	-----	25	1	-----	8	0	1	3
Tennessee.....	11	10	6	59	25	47	24	3	23	0	4	5
Alabama.....	10	8	12	135	91	194	4	13	4	1	1	3
Mississippi ¹	2	22	7	15	-----	-----	2	-----	-----	0	1	3
WEST SOUTH CENTRAL												
Arkansas.....	2	10	8	44	55	126	2	4	8	0	0	3
Louisiana.....	1	1	7	1	43	43	7	-----	5	0	0	2
Oklahoma.....	4	8	8	180	85	93	5	3	3	2	2	1
Texas.....	26	19	33	2,015	1,159	2,121	409	42	50	3	4	4
MOUNTAIN												
Montana.....	0	2	2	3	16	16	112	55	55	0	0	1
Idaho.....	0	1	1	7	14	14	5	3	3	0	0	0
Wyoming.....	1	1	0	-----	27	27	9	4	4	0	0	0
Colorado.....	4	13	6	72	31	42	27	10	25	1	0	1
New Mexico.....	2	8	1	1	1	1	-----	11	-----	0	0	1
Arizona.....	1	3	2	197	131	131	1	39	10	1	0	0
Utah ¹	16	1	0	14	-----	55	6	4	10	3	0	1
Nevada.....	0	0	0	-----	-----	-----	1	-----	3	0	0	0
PACIFIC												
Washington.....	7	1	4	-----	-----	-----	37	6	43	2	1	3
Oregon.....	1	0	4	29	22	22	2	20	37	2	1	2
California.....	12	21	24	131	13	30	246	17	146	4	4	14
Total.....	244	300	323	3,835	2,660	3,466	4,093	2,251	2,723	45	53	187
52 weeks.....	12,511	16,194	15,559	338,209	223,172	367,868	215,719	662,972	602,085	3,407	5,638	7,990
Seasonal low week ²	(27th)	July 5-11		(30th)	July 26-Aug. 1		(35th)	Aug. 30-Sept. 5		(37th)	Sept. 13-19	
Total since low.....	6,214	7,566	8,410	36,696	32,975	32,975	30,217	22,887	26,124	766	972	1,504

¹ New York City only. ² Philadelphia only. ³ Period ended earlier than Saturday.

⁴ Dates, between which the approximate low week ends. The specific date will vary from year to year.

Telegraphic morbidity reports from State health officers for the week ended December 27, 1947, and comparison with corresponding week of 1946 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46
	Dec. 27, 1947	Dec. 28, 1946		Dec. 27, 1947	Dec. 28, 1946		Dec. 27, 1947	Dec. 28, 1946		Dec. 27, 1947 ¹	Dec. 28, 1946	
NEW ENGLAND												
Maine.....	1	0	0	20	13	22	0	0	0	1	0	1
New Hampshire.....	0	0	0	10	4	4	0	0	0	0	0	0
Vermont.....	0	1	0	2	9	9	0	0	0	0	0	0
Massachusetts.....	2	3	1	88	144	246	0	0	0	1	2	2
Rhode Island.....	0	1	0	9	7	7	0	0	0	0	0	0
Connecticut.....	0	1	0	12	23	29	0	0	0	2	0	0
MIDDLE ATLANTIC												
New York.....	6	8	3	118	220	252	0	0	0	3	1	2
New Jersey.....	0	2	1	31	56	60	0	0	0	0	1	1
Pennsylvania.....	2	1	1	175	90	197	0	0	0	12	0	2
EAST NORTH CENTRAL												
Ohio.....	4	0	0	231	249	225	0	0	0	0	1	2
Indiana.....	*0	0	0	46	92	78	1	0	0	2	0	0
Illinois.....	4	10	5	104	101	141	0	0	0	1	4	1
Michigan ²	5	4	3	93	134	160	0	0	0	1	0	2
Wisconsin.....	0	11	8	42	73	109	0	0	0	0	0	0
WEST NORTH CENTRAL												
Minnesota.....	2	3	0	36	35	62	0	0	0	0	0	0
Iowa.....	0	0	0	62	29	50	0	0	0	0	0	0
Missouri.....	1	7	3	34	34	45	0	0	0	1	1	1
North Dakota.....	0	1	1	4	2	11	0	0	0	0	0	0
South Dakota.....	0	0	0	11	4	10	0	0	0	0	0	0
Nebraska.....	0	5	0	30	30	30	0	0	0	0	0	0
Kansas.....	1	3	1	15	40	60	0	0	0	1	0	0
SOUTH ATLANTIC												
Delaware.....	0	0	0	7	10	4	0	0	0	0	0	0
Maryland ³	0	0	0	12	21	29	0	0	0	1	1	1
District of Columbia.....	0	0	0	4	10	26	0	0	0	0	0	0
Virginia.....	0	2	0	34	33	50	0	0	0	2	0	2
West Virginia.....	0	0	0	13	19	28	0	0	0	0	0	0
North Carolina.....	4	1	0	24	13	48	0	0	0	0	0	0
South Carolina.....	1	0	1	3	0	10	0	0	0	0	0	1
Georgia.....	1	0	0	9	6	17	0	0	0	1	0	0
Florida.....	1	9	0	8	7	9	0	0	0	6	3	2
EAST SOUTH CENTRAL												
Kentucky.....	2	0	0	18	4	49	0	0	0	0	2	1
Tennessee.....	1	2	0	40	40	21	0	0	0	3	6	1
Alabama.....	0	2	1	18	12	11	0	0	0	0	1	2
Mississippi ³	0	5	1	3	8	8	0	0	0	1	0	0
WEST SOUTH CENTRAL												
Arkansas.....	1	3	1	0	3	8	0	0	1	0	0	2
Louisiana.....	0	0	0	4	1	11	0	0	0	3	1	2
Oklahoma.....	0	1	0	12	9	16	0	1	1	0	2	2
Texas.....	4	0	2	51	20	51	0	0	0	0	3	6
MOUNTAIN												
Montana.....	0	0	0	12	3	13	0	0	0	0	0	0
Idaho.....	10	0	0	5	8	17	0	0	0	1	2	0
Wyoming.....	1	0	0	7	20	10	0	0	0	0	0	0
Colorado.....	0	1	1	38	31	41	0	0	0	0	0	0
New Mexico.....	0	0	0	6	6	11	0	0	0	0	0	3
Arizona.....	1	0	0	4	11	11	0	0	0	0	0	0
Utah ⁴	0	1	1	10	21	41	0	0	0	0	0	0
Nevada.....	0	0	0	1	0	0	0	0	0	0	0	0
PACIFIC												
Washington.....	1	6	4	30	81	65	0	0	0	0	3	1
Oregon.....	2	0	1	23	15	26	0	0	0	0	0	1
California.....	3	14	7	99	72	149	0	0	0	2	2	1
Total.....	61	108	76	1,668	1,873	2,858	1	1	5	45	36	51
52 weeks.....	*10,908	25,264	13,734	83,300	112,981	140,475	169	333	390	3,894	4,003	5,392
Seasonal low week ⁴	(11th) Mar. 15-21			(32nd) Aug. 9-15			(35th) Aug. 30-Sept. 5			(11th) Mar. 15-21		
Total since low.....	*10,196	24,797	13,337	21,197	26,686	38,571	22	54	83	3,409	3,528	4,576

³ Period ended earlier than Saturday.

⁴ Dates between which the approximate low week ends. The specific date will vary from year to year.

⁵ Including paratyphoid fever reported separately as follows: Maine 1; Connecticut 1; Kansas 1; Virginia 1; Louisiana 1.

⁶ Delayed report (included in cumulative totals only): Poliomyelitis, Indiana, 9 cases.

Telegraphic morbidity reports from State health officers for the week ended December 27, 1947, and comparison with corresponding week of 1946 and 5-year median—Con.

Division and State	Whooping cough			Week ended December 27, 1947								
	Week ended—		Median 1942-46	Dysentery			Enceph- alitis, infectious	Rocky Mt. spot- ted fever	Tula- remia	Ty- phus fever, en- demic	Un- du- lant fever	
	Dec. 27, 1947	Dec. 28, 1946		Ame- bic	Bacil- lary	Un- spec- ified						
NEW ENGLAND												
Maine.....	16	3	9								1	
New Hampshire.....	9	1	7								1	
Vermont.....	40	16	34								1	
Massachusetts.....	102	141	94		10						1	
Rhode Island.....	17	9	9								2	
Connecticut.....	31	11	17				1				2	
MIDDLE ATLANTIC												
New York.....	123	158	206	8	17						2	
New Jersey.....	87	105	97								2	
Pennsylvania.....	100	116	116								2	
EAST NORTH CENTRAL												
Ohio.....	87	49	55						1		1	
Indiana.....	32	32	15		7		1		3		2	
Illinois.....	74	67	51	1					2		3	
Michigan.....	170	118	70	1	1						3	
Wisconsin.....	113	177	67								2	
WEST NORTH CENTRAL												
Minnesota.....	40	2	15								12	
Iowa.....	20	10	12								1	
Missouri.....	12	11	11			1					1	
North Dakota.....	3		2	2								
South Dakota.....		4	6									
Nebraska.....	4	4	2								1	
Kansas.....	22	6	12						1		2	
SOUTH ATLANTIC												
Delaware.....	5	6	2									
Maryland.....	53	39	39			1			2		1	
District of Columbia.....	3	4	4									
Virginia.....	75	35	34	1		20			2		1	
West Virginia.....	12	23	13									
North Carolina.....	16	12	35		1							
South Carolina.....	30	14	33		1							
Georgia.....	4	19	4		2					2	4	
Florida.....	26	48	6	1							1	
EAST SOUTH CENTRAL												
Kentucky.....	3	23	11									
Tennessee.....	15	9	19								1	
Alabama.....	11	97	14						3	1		
Mississippi.....	3								2			
WEST SOUTH CENTRAL												
Arkansas.....	1	11	17	3		52			3	1		
Louisiana.....	8	2										
Oklahoma.....	7	9	3	1					2		1	
Texas.....	217	130	130	6	292	143			2	4	2	
MOUNTAIN												
Montana.....	3	3	3									
Idaho.....	31	3	2								1	
Wyoming.....	8	10	3						2			
Colorado.....	38	7	10						1		4	
New Mexico.....	4	10	2			1						
Arizona.....	19	14	7			20						
Utah.....	8	1	6			1						
Nevada.....												
PACIFIC												
Washington.....	25	7	17								1	
Oregon.....	16	5	8									
California.....	74	66	66	6	3		2			6	4	
Total.....	1,817	1,647	1,570	30	334	239	4	0	27	16	59	
Same week, 1946.....	1,647			33	289	136	8	1	63	24	83	
Median, 1942-46.....	1,570			33	266	94	10	1	36	58	59	
52 weeks: 1947.....	153,805			3,014	16,802	9,814	626	568	1,354	1,911	6,073	
1946.....	100,212			2,427	16,712	6,487	617	573	1,179	3,351	5,337	
Median, 1942-46.....	123,554			1,958	18,182	7,621	620	455	818	4,533	5,071	

* Period ended earlier than Saturday.

* 2-year average, 1945-46.

Anthrax: Pennsylvania 1. Leprosy: New York 1.

Alaska, week ended December 27, 1947: Meningitis 1.

Territory of Hawaii, week ended December 27, 1947: Bacillary dysentery 1, influenza 1, whooping cough

16. Corrections: Week ended December 20, 1947, leprosy 1 (instead of 0); whooping cough 42 (instead of 38).

WEEKLY REPORTS FROM CITIES *

City reports for week ended December 20, 1947

This table lists the reports from 87 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomylitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
NEW ENGLAND												
Maine:												
Portland.....	0	0	---	0	---	0	1	0	0	0	0	9
New Hampshire:												
Concord.....	0	0	---	0	---	0	1	0	0	0	0	---
Vermont:												
Barre.....	0	0	---	0	---	0	0	0	0	0	0	---
Massachusetts:												
Boston.....	5	0	---	1	66	1	14	1	20	0	0	20
Fall River.....	0	0	---	0	1	0	1	0	1	0	1	1
Springfield.....	0	0	---	0	2	0	0	0	6	0	0	6
Worcester.....	0	0	---	0	2	0	6	0	6	0	0	17
Rhode Island:												
Providence.....	0	0	---	0	1	0	5	0	6	0	1	18
Connecticut:												
Bridgeport.....	0	0	---	0	---	0	0	0	1	0	0	1
Hartford.....	0	0	---	0	1	0	0	0	2	0	0	14
New Haven.....	0	0	---	0	---	0	1	0	0	0	0	9
MIDDLE ATLANTIC												
New York:												
Buffalo.....	2	0	---	2	---	0	8	0	5	0	0	4
New York.....	12	0	6	3	149	3	88	3	53	0	0	31
Rochester.....	0	0	---	0	---	0	1	0	9	0	0	12
Syracuse.....	6	0	---	0	---	0	1	1	1	0	0	20
New Jersey:												
Camden.....	0	0	---	0	---	0	4	0	0	0	0	4
Newark.....	0	0	1	0	5	0	8	0	6	0	0	7
Trenton.....	2	0	---	0	1	0	2	0	1	0	0	---
Pennsylvania:												
Philadelphia.....	1	0	2	1	31	0	22	2	38	0	0	43
Pittsburgh.....	0	1	---	2	1	4	4	0	15	0	0	19
Reading.....	0	0	---	0	---	0	1	0	5	0	0	11
EAST NORTH CENTRAL												
Ohio:												
Cincinnati.....	0	0	---	0	---	1	6	0	4	0	0	2
Cleveland.....	1	0	---	0	2	0	5	2	26	0	0	28
Columbus.....	5	0	1	1	41	0	1	0	9	0	0	18
Indiana:												
Fort Wayne.....	0	0	---	0	---	0	2	0	8	0	0	---
Indianapolis.....	3	0	---	0	1	0	5	1	5	0	0	8
South Bend.....	0	0	---	0	1	0	0	0	0	0	0	---
Terre Haute.....	0	0	---	0	3	0	0	0	0	0	0	---
Illinois:												
Chicago.....	0	0	3	0	223	0	31	1	32	0	0	19
Michigan:												
Detroit.....	0	0	2	0	5	0	13	2	23	0	0	39
Flint.....	0	0	---	0	---	0	2	0	6	0	0	3
Grand Rapids.....	0	0	---	0	35	0	1	0	3	0	0	15
Wisconsin:												
Kenosha.....	0	0	---	0	1	0	0	0	0	0	0	---
Milwaukee.....	0	0	---	0	5	0	3	0	12	0	0	11
Racine.....	0	0	---	0	1	0	0	0	3	0	0	5
Superior.....	0	0	---	0	---	0	0	0	1	0	0	7
WEST NORTH CENTRAL												
Minnesota:												
Duluth.....	0	0	---	0	---	0	3	0	1	0	0	16
St. Paul.....	0	0	---	0	5	0	2	0	6	0	0	23
Missouri:												
Kansas City.....	1	0	6	0	1	0	8	0	1	0	0	16
St. Joseph.....	0	0	---	0	---	1	0	0	4	0	0	1
St. Louis.....	5	0	3	0	1	1	7	1	9	0	2	5

* In some instances the figures include nonresident cases.

City reports for week ended Dec. 20, 1947—Continued

Division State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, men- ingococcus, cases	Pneumonia deaths	Pollomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
WEST NORTH CENTRAL—continued												
North Dakota:												
Fargo.....	0	0		0	9	0	0	0	1	0	0	2
Nebraska:												
Omaha.....	0	0		0		0	3	0	2	0	0	7
Kansas:												
Topeka.....	0	0		0	1	0	0	0	0	0	0	1
Wichita.....	0	0		0		0	3	0	4	0	0	3
SOUTH ATLANTIC												
Delaware:												
Wilmington.....	0	0		0		0	1	0	2	0	0	
Maryland:												
Baltimore.....	2	0	1	1	1	0	3	1	9	0	0	42
Cumberland.....	1	0		0		0	0	0	0	0	0	
Frederick.....	0	0		0		0	0	0	0	0	0	
District of Columbia:												
Washington.....	0	0		1	18	0	6	0	8	0	1	9
Virginia:												
Lynchburg.....	0	0		0		0	0	0	0	0	0	12
Richmond.....	0	0		1	1	2	3	0	7	0	0	10
Roanoke.....	0	0		0		0	0	0	1	0	0	2
West Virginia:												
Charleston.....	0	0		0		0	5	0	0	0	0	
Wheeling.....	0	0		0	1	0	0	0	1	0	0	
North Carolina:												
Raleigh.....	0	0		0		0	0	0	0	0	0	4
Wilmington.....	0	0		0		0	0	0	1	0	0	
Winston-Salem.....	0	0		0		0	2	1	3	0	0	5
South Carolina:												
Charleston.....	0	0	108	0	1	0	2	0	0	0	0	2
Georgia:												
Atlanta.....	0	0	2	2		0	4	1	5	0	0	2
Brunswick.....	0	0		0		0	0	0	0	0	0	
Savannah.....	0	0	4	0		0	1	0	2	0	0	3
Florida:												
Tampa.....	1	0		0	2	0	4	0	0	0	1	1
EAST SOUTH CENTRAL												
Tennessee:												
Memphis.....	0	0		0	9	0	1	0	0	0	2	2
Nashville.....	0	0		0		0	1	0	3	0	0	2
Alabama:												
Birmingham.....	0	0		0		0	3	0	1	0	0	
Mobile.....	1	0	12	0		0	3	0	2	0	0	
WEST SOUTH CENTRAL												
Arkansas:												
Little Rock.....	0	0		0		0	2	0	0	0	0	1
Louisiana:												
New Orleans.....	0	0		0		0	6	1	3	0	0	1
Shreveport.....	1	0		0		0	2	0	0	0	0	
Oklahoma:												
Oklahoma City.....	0	0	2	0		0	1	0	5	0	1	2
Texas:												
Dallas.....	0	0	1	1		0	6	0	1	0	0	2
Galveston.....	0	0		0		0	2	0	1	0	0	
Houston.....	0	0		0	6	0	1	0	0	0	0	2
San Antonio.....	0	0	1	1		1	4	0	2	0	0	
MOUNTAIN												
Montana:												
Billings.....	0	0		0	53	0	1	0	1	0	0	
Great Falls.....	0	0		0	1	0	0	0	0	0	0	
Helena.....	0	0		0	3	0	0	0	0	0	0	
Missoula.....	0	0		0	6	0	1	0	1	0	0	4
Colorado:												
Denver.....	4	0	2	1	3	0	3	0	14	0	0	11
Pueblo.....	0	0		0		0	0	0	7	0	0	25
Utah:												
Salt Lake City.....	0	0		0	3	0	0	1	1	0	0	

City reports for week ended December 20, 1947—Continued

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
PACIFIC												
Washington:												
Seattle.....	0	0	-----	1	2	1	8	0	7	0	0	10
Spokane.....	0	0	-----	0	1	0	0	0	3	0	0	-----
Tacoma.....	0	0	-----	0	33	0	0	0	3	0	0	1
California:												
Los Angeles.....	2	0	19	3	24	0	2	0	22	0	6	13
Sacramento.....	0	0	-----	0	3	0	6	0	5	0	0	-----
Total.....	55	1	176	22	766	15	351	19	456	0	9	643
Corresponding week, 1946 ¹	122	-----	92	21	738	-----	298	-----	491	1	11	531
Average 1942-46 ¹	77	-----	1,367	47	981	-----	431	-----	794	0	9	561

¹ Exclusive of Oklahoma City.² 3-year average, 1944-46.³ 5-year median, 1942-46.*Dysentery, amebic.*—Cases: New York 6; New Orleans 2; San Antonio 1; Los Angeles 2.*Dysentery, bacillary.*—Cases: Worcester 4; Charleston, S. C. 1; San Antonio 1; Los Angeles 3.*Dysentery, unspecified.*—Cases: Baltimore 1; San Antonio 4.*Tularemia.*—Cases: St. Louis 1; Baltimore 1; Washington 1; New Orleans 2.*Typhus fever, endemic.*—Cases: New York 1; Memphis 1; Nashville 1.

Rates (annual basis) per 100,000 population, by geographic groups, for the 87 cities in the preceding table (latest available estimated population, 33,260,600)

	Diphtheria case rates	Encephalitis, infectious, case rates	Influenza		Measles case rates	Meningitis, meningococcus, case rates	Pneumonia death rates	Poliomylitis case rates	Scarlet fever case rates	Smallpox case rates	Typhoid and paratyphoid fever case rates	Whooping cough case rates
			Case rates	Death rates								
New England.....	13.1	0.0	0.0	2.6	191	2.6	75.8	2.6	110	0.0	5.2	248
Middle Atlantic.....	10.6	0.5	4.2	3.7	87	3.2	64.3	2.9	62	0.0	0.0	70
East North Central.....	5.5	0.0	3.7	0.6	195	0.6	42.3	3.7	81	0.0	0.0	95
West North Central.....	14.6	0.0	21.9	0.0	41	4.9	63.2	2.4	68	0.0	4.9	180
South Atlantic.....	6.5	0.0	188.0	8.2	39	3.3	50.7	4.9	64	0.0	3.3	150
East South Central.....	5.9	0.0	70.8	0.0	53	0.0	47.2	0.0	35	0.0	11.8	24
West South Central.....	2.5	0.0	10.2	5.1	15	2.5	61.0	2.5	30	0.0	2.5	20
Mountain.....	33.0	0.0	16.5	8.3	570	0.0	74.3	8.3	198	0.0	0.0	330
Pacific.....	4.2	0.0	39.6	8.3	131	2.1	33.3	0.0	83	0.0	0.0	50
Total.....	8.6	0.2	27.7	3.5	120	2.4	55.2	3.0	72	0.0	1.4	101

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended December 6, 1947.—During the week ended December 6, 1947, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chickenpox		72	4	216	453	70	108	69	78	1,070
Diphtheria		1	1	16	14	2	1	1		36
Dysentery:										
Amebic					1					1
Bacillary				1						1
Encephalitis, infectious				1				2		3
German measles				3	13		2	17	7	42
Influenza		12			12				14	38
Measles		2		353	252	28	17	14	92	758
Meningitis, meningococcus								2	2	4
Mumps		39		271	196	30	35	47	27	645
Poliomylitis		1		1	3		13	1	1	20
Scarlet fever		12	6	60	78	5	3	16	5	185
Tuberculosis (all forms)		3	18	72	43	35	31	24	73	299
Typhoid and paratyphoid fever				7	2	2	1			12
Undulant fever				1				2		3
Veneral diseases:										
Gonorrhea	2	15	12	79	100	23	23	41	66	361
Syphilis	1	10	2	80	67	13	11	6	18	208
Other forms				1					1	2
Whooping cough			1	40	70	37	6	41	42	237

UNITED STATES-MEXICAN BORDER

Cerebrospinal meningitis outbreak.—Under date of December 9, 1947, an outbreak of cerebrospinal meningitis was reported in Mexicali, Mexico, with 12 cases during the week ended December 8. Up to December 24, 21 cases with 3 deaths had been reported in Mexicali, and in California 4 cases 1 death in Imperial County and 2 cases in Riverside County.

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual incidence, only those places are included which had not previously reported any of the above-mentioned diseases, except yellow fever, during recent months. All reports of yellow fever are published currently.

A table showing the accumulated figures for these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

Cholera

Egypt.—Semi-official information dated December 10, states that the incidence of cholera in Egypt during the preceding week averaged about one case a day. The disease is now confined to Faiyum Province. It is understood that Egyptian authorities will not declare Egypt free from infection until 10 days after the last case is reported.

Syria.—Information received December 31, states that during the period December 19–28, 27 cases of cholera with 9 deaths were reported in Hauran Province, and for the same period 14 cases with 4 deaths were reported in Damascus Muhasazet. None was reported in the city of Damascus. No additional cases or deaths were reported in Syria on December 29 or 30.

Smallpox

Iran.—For the week ended November 8, 1947, 46 cases of smallpox with 2 deaths were reported in Iran.

Sudan (Anglo-Egyptian).—During the week ended November 29, 1947, 180 cases of smallpox with 13 deaths were reported in Anglo-Egyptian Sudan.

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FEDERAL SECURITY AGENCY
UNITED STATES PUBLIC HEALTH SERVICE
THOMAS PARRAN, Surgeon General

DIVISION OF PUBLIC HEALTH METHODS

G. St. J. PERROTT, Chief of Division

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It contains (1) current information regarding the incidence and geographic distribution of communicable diseases in the United States, insofar as data are obtainable, and of cholera, plague, smallpox, typhus fever, yellow fever, and other important communicable diseases throughout the world; (2) articles relating to the cause, prevention, and control of disease; (3) other pertinent information regarding sanitation and the conservation of the public health.

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